

# Python Fun(damentals)

## Installing Python Modules

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- \* Python Package Manager
- \* Using ``pip``



# Python Package Manager

Python like other major languages has a main choice of a package manager. PyPi provides this support to the open source community and contributors. Provides you the ability to publish your open source project to the world with a simple command to install. PyPi can be found at <https://pypi.org/>. Which will provide you the following:

- Single repository to share your distributed package
- Strong version control
- Great CLI support to use packages within your build system
  - `pip` - The Python Package Installer (<https://pip.pypa.io/en/stable/installing/>)

# Installing Python Modules Using `pip`

## Install requests from PyPI

```
$ pip install requests
Collecting requests
  Downloading requests-2.23.0-py2.py3-none-any.whl (58 kB)
    |████████████████████████████████████████| 58 kB 5.8 MB/s
Collecting urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1
  Downloading urllib3-1.25.9-py2.py3-none-any.whl (126 kB)
    |████████████████████████████████████████| 126 kB 23.2 MB/s
Collecting chardet<4,>=3.0.2
  Downloading chardet-3.0.4-py2.py3-none-any.whl (133 kB)
    |████████████████████████████████████████| 133 kB 77.5 MB/s
Collecting certifi>=2017.4.17
  Downloading certifi-2020.4.5.1-py2.py3-none-any.whl (157 kB)
    |████████████████████████████████████████| 157 kB 98.3 MB/s
Collecting idna<3,>=2.5
  Downloading idna-2.9-py2.py3-none-any.whl (58 kB)
    |████████████████████████████████████████| 58 kB 76.2 MB/s
Installing collected packages: urllib3, chardet, certifi, idna, requests
Successfully installed certifi-2020.4.5.1 chardet-3.0.4 idna-2.9 requests-2.23.0 urllib3-1.25.9
```

# Installing Python Modules Using `pip` cont.

## Install specific version of requests

```
$ pip install requests==2.22.0
Collecting requests==2.22.0
  Downloading requests-2.22.0-py2.py3-none-any.whl (57 kB)
    |████████████████████████████████████████| 57 kB 3.5 MB/s
Collecting idna<2.9,>=2.5
  Downloading idna-2.8-py2.py3-none-any.whl (58 kB)
    |████████████████████████████████████████| 58 kB 14.5 MB/s
Installing collected packages: idna, requests
  Attempting uninstall: idna
    Found existing installation: idna 2.9
    Uninstalling idna-2.9:
      Successfully uninstalled idna-2.9
  Attempting uninstall: requests
    Found existing installation: requests 2.23.0
    Uninstalling requests-2.23.0:
      Successfully uninstalled requests-2.23.0
Successfully installed idna-2.8 requests-2.22.0
```

# Installing Python Modules Using `pip` cont.

## List packages installed

```
$ pip freeze
ansible==2.9.7
asn1crypto==0.24.0
bcrypt==3.1.6
configparser==3.5.0b2
cryptography==2.6.1
future==0.18.2
Glances==3.1.4.1
certifi==2020.4.5.1
chardet==3.0.4
idna==2.8
requests==2.22.0
urllib3==1.25.9
```

# Specifying requirements in `requirements.txt`

- The `requirements.txt` file is used for specifying what python packages are required to run the project.
- Typically the `requirements.txt` file is located in the root directory of your project.

You can easily install your packages (Specific Versions Known to Work for the Package) using pip and the `requirements.txt` file:

```
$ cat requirements.txt
requests==2.22.0
```

```
$ pip install -r requirements.txt
Collecting requests
  Downloading requests-2.23.0-py2.py3-none-any.whl (58 kB)
    |████████████████████████████████████████| 58 kB 5.8 MB/s
...:SNIP:...
Successfully installed certifi-2020.4.5.1 chardet-3.0.4 idna-2.9 requests-2.23.0 urllib3-1.25.9
```

# Lab\_2.py

## Tasking

Using the new `pip` command perform the following:

1. Open the custom `requirements.txt` file in the `01_python3_tooling_build_systems/` folder
2. Add the python package `pytest` and specify latest `5.4.1`
3. Install these packages using `pip`

## Testing your work

**NOTE:** you should see Green `PASS` statements indicating you completed the lab

```
$ cd 01_python3_tooling_build_systems
$ python lab_1.py
```